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ABSTRACT

This report is a summary of an 8-week pilot study of the current uses of unobtrusive measures in the various fields of social services. Unobtrusive measures are simply clues, traces, signs, patterns, or records that allow the indirect or inferential evaluation of phenomena. The survey suggests that unobtrusive measures have long been widely used in all of the fields studied--public health, mental health, hospital administration, law, personnel and organizational management, and higher education--to fulfill the following functions: (1) evaluation of past organizational performances (feedback); (2) evaluation of on-going operations (feedforward); (3) interpersonal decisionmaking (hiring, firing, and promotions); and (4) estimation of population and organizational conditions. A directory and examples of organizations and persons currently using unobtrusive measures is included by the following fields: hospital administration and accreditation; public health, epidemiology, and sanitation; mental health, psychiatry, and environmental planning; banking, personnel evaluation, and organizational management; social, economic accounting, and planning; law; noise monitoring; and higher education accreditation and evaluation. Proposals for subsequent research and development are also included. (Author/HS)

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SURVEY OF THE APPLICATIONS AND USES OF UNOBTRUSIVE MEASURES IN FIELDS OF SOCIAL SERVICE

A Pilot Study Sponsored by the Kettering Foundation

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PART I

SUMMARY OF PILOT STUDY AND PROPOSALS FOR SUBSEQUENT RESEARCH AND DEVELOPMENT

UNOBTRUSIVE MEASURES: Summary of Pilot Study and Proposals for Subsequent Research and Development

The following is a summary of an eight week pilot study of the current uses of unobtrusive measures. Unobtrusive measures are simply clues, traces, signs, patterns, or records which allow the indirect or inferential evaluation of phenomena. For example, hunters have for centuries made estimates of the game they are stalking by reading "clues" and "signs" as to size, physical condition, and direction of travel.

Our survey suggests that unobtrusive measures have long been widely used in all of the fields we studied--public health, mental health, hospital administration, law, personnel and organizational management, and higher education--to fulfill the following functions:

Evaluation of past organizational performances (Feedback).
Evaluation of on-going operations (Feedforward).
Inter-personal decision-making (Hiring, Firing, and Promotions).
Estimation of populations and organizational conditions (Monitoring)

Our survey of unobtrusive measures coincides with a period of discontent with conventional methods of quantitative research in the social sciences. In recent years sociologist and psychologist have sought qualitative and non-reactive strategies to supplement and/or replace conventional questionnaire and survey research methods, as response rates to questionnaires decrease.

Rather than focus only on the contributions of unobtrusive measures to new developments in academic disciplines, we have chosen to survey the application of unobtrusive measures to fields of social service. In this pilot study we have attempted to identify some of the major trends in the employment of indirect signs and clues so as to provide "real" and useable information in the day-to-day practices of various professions and social service organizations.

The current applications of unobtrusive measures may be summarized according to the following typology:

Level One: Individual cases--involving a professional and one client.

Examples

Psychiatrist observes a patient's bodily movements, facial expressions, voice, as indirect indicators of a patient's emotional state.

Doctor infers a disease or condition such as lung cancer from a patient's smoking behavior.

Banker interprets a cluster of signs (appearance, length of residence, type of dwelling) as indicators of a loan applicant's stability.

Lawyers watch for unusual behavior, clues to infer biases of prospective jurors during the screening process.

Level Two: Professional services for a specific, designated community, locale, institution, or population. This would refer to, for example, a specific hospital, a company, a university, an Indian reservation.

Examples

Hospital Administration: ratios as indirect measures of service quality: autopsies, square footage per bed, ratio of staff to patients, average length of stay per patient.

Public Health: Estimates of a city's rat population.

Adjustment of medical practices and procedures to the distinctive cultural patterns of an Indian reservation.

Banking: Adjustment of banking services to local community; e.g., in a university community, quantity of business follows academic calendar.

Organizational Morale and Productivity: Indicators such as employee turnover rate, sickness and absence rate, amount of peper consumption, etc.

Higher Education: ratios as indirect measures of academic quality; e.g., percentage of faculty with PHD's, ratio of students to faculty, median SAT scores of students, library ratios, amount of damage to physical facilities.

Level Three: Up-Grading of Professional Services, Continuing Professional Education, and Long-Range Planning. Carried out by trans-institutional organizations, such as regional boards, state boards. Concerned with professional self-evaluation.

Examples

Law: Center for Continuing Education of the Bar monitors new trends and decisions, provides workshops to meet new needs of practicing lawyers.

Management Development Programs and Workshops.

In-Service Training Programs in Public Health Departments.

As a conclusion to this pilot study, we would suggest that unobtrusive measures have considerable potential for application to professional social services in the following areas:

1. As a methodological cement which promotes collaboration and coordination between professions and academic disciplines at both the research and practitioner level. For example, two seemingly unrelated professions--architecture and psychiatry--exhibit striking similarities in their use of unobtrusive measures to evaluate the effects of spatial relations and physical environment on individual behavior. Given this common ground, subsequent architectural design will be prepared to absorb and employ the findings of the psychiatrist in order to create architectural environments which take into account the mental health of occupants.

2. As an approach to the improvement of professional services --and techniques by means of in-service training and continuing professional education programs.

3. As a vehicle for promoting social change.

Subsequent investigation of the applications of unobtrusive measures in professions and service organizations, we feel, must face the following questions:

1. What are the consequences of making unobtrusive measures public? Does public exposure of an organization's use of unobtrusive measures increase that organization's social accountability? Does increased public awareness of unobtrusive measures decrease their validity?

2. Can professional social services be improved by initiating deliberate and systematic applications of unobtrusive measures beyond their current informal usage?

To explore these questions, we propose to set up laboratory programs involving the application of unobtrusive measures to the following situations:

1. Accreditation in higher education: in collaboration with Kay Anderson, Western Association of Schools and Colleges (Accrediting Commission for Senior Colleges and Universities).

2. In-Service Professional Training in the Field of Law: in collaboration with Mr. Paul Peyrat, University of California's Center for Continuing Education of the Bar.

3. Adjustment of Public Health Services to Local Community's culture and needs: Indian Reservation. In collaboration with Mr. Charles Erickson, Indian Health Services: Office of Program Development, Tuscon, Arizona.

4. Evaluation of Innovation in Elementary School Systems: Berkeley Experimental Schools Program. In collaboration with Dr. Leonard Duhl, Co-Director of the Evaluation Program.

The data and results of these developmental laboratory programs will provide a broad data base for the alteration of practices in a variety of fields, for more integrative work engaged in jointly by several of the social sciences, for more effective training and evaluation programs in many areas of social service, and for improved knowledge of the role of informal systems of communication, evaluation and status in all human organizations.

PART II

DIRECTORY AND EXAMPLES (LISTED BY FIELDS)

Directory: Organizations and Persons Using Unobtrusive Measures for Purposes of Hospital Accreditation.

1. Joint Commission on Accreditation of Hospitals.

   Participating members include the following organizations:

   American Medical Association
   American Hospital Association
   American College of Physicians
   College of Surgeons

2. Evaluation of Medical Education and Hospital Training Programs:

   The Council on Medical Education and Hospitals of the American Medical Association

3. Attempts to Develop Measures of the Quality of Medical Care:

   United States Department of Medicine and Surgery, Report of the Committee on Measurement of the Quality of Medical Care, Washington, D.C., April 1959.

4. Dr. Alfred Childs, Professor of Public Health, U.C., Berkeley.

5. Dr. Don Holloway, Professor of Public Health, U.C., Berkeley.

Joint Commission on Accreditation of Hospitals

Quoted from the 1964 edition of Hospital Accreditation References, Chicago: The American Hospital Association.

1. Raison d'Etre for Unobtrusive Meaures: "The greatess weakness in hospitals today is the lack of a good system for assessing the quality of care given patients in each hospital. In other words, the greatest need is for a system by which a responsible organized medical staff in a hospital can evaluate by objective measures the care given patients." (p. 46)

2. Indicators of a good hospital administrator: ". . .the surveyor gives his assessment on the survey report of his personal reaction to the administrator.

   There are many intangibles here, among them:

   a. General neatness of office and desk.
   b. General air of control and conduct of hospital.
   c. Administrator's knowledge of answers to questions asked concerning his hospital; obvious bluffing or fumbling for answers.
   d. His rapport with medical staff and hospital personnel.
   e. His knowledge and ability to obtain materials easily and efficiently. Formal training in hospital administration should be encouraged but it should never become the only criterion for approval of an administrator." (p. 17)

3. Ratio as an index of quality: "Adequate space per bed. Square footage of patient bed space is important. Requirements differ in various states and municipalities, but a general average is 100 square feet in private rooms and 80 square feet per bed in multiple patient rooms. The average for nurseries is 24 square feet per bassinet, with not more than 8 to 12 bassinets per nursery. The ratio of plumbing fixtures per patient is important. . ." (p. 20)

4. Ratios of Autopsies Per Death: "What is the required autopsy rate for accreditation? No specific rate is required in the Standards for Hospital Accreditation. However, the commissioners recognize the importance of autopsies to the standards of medical care. The commissioners believe that it is most desirable for a hospital to have an autopsy rate of 20 percent of hospital deaths. Furthermore, hospitals should bear in mind that the American Medical Association requires an autopsy rate of at least 25 percent of hospital deaths for approval of an intern training program." (p. 131).

5. Ratios: Size of Medical Staff:

6. Nurses' Notes as Unobtrusive Measure of Quality: ". . . when I survey a hospital I always check the nurses' notes. The nurses' notes are an excellent tip-off on the patient care given. For example, the notes might show that a physician saw his patient only every third or fourth day. This is inadequate. (Note: Following ex. of "itinerant surgery," and "ghost surgery" revealed by checking notes.) (p. 90)

7. Evaluation of Care: Charts as Indicators of Quality: Several examples on pp. 110-111.

It is not too difficult, and once a pattern has been developed it is fairly easy. As an explanation, here is the way one hospital approached the problem as far as their audit committee was concerned (the audit committee being a combination of the medical record and tissue committees):

1. Front Sheets: Are they properly filled out and signed by the attending physician?

   a. Diagnoses. Are they adequate to cover the pathology and in acceptable terminology?

   b. Progress notes. Are they sufficient so that clinical course can be followed from the record? The minimum should be daily notes in case of serious illness. Are laboratory and x-ray reports attached to the charts? Are operative reports in proper order and signed? Are release forms attached if necessary, such as in the case of sterilizations?

   c. Was a physical examination accomplished on admission?

   d. Was a history and narrative summary completed?

2. Diagnoses: Do the clinical findings support the final diagnosis? Do the laboratory findings support the final diagnosis and have they

been sufficient in relationship to seriousness of the case? If essential laboratory or x-ray studies have been done on previous admissions or outside of the hospital, have they been noted or properly recorded on the chart? Has a provisional or preoperative diagnosis been made? Is there agreement between final diagnosis and pathological diagnosis, if any?

3. Treatment: Was the treatment employed generally acceptable or open to question? Can the method of treatment be judged from the data on the record? Did the physician exceed his privileges?

4. Results: Note the final result in relation to the nature of the case of the prognosis. Is it justifiable or not? In case of death, note whether it was expected, justifiable or not justifiable. Note whether or not there was an autopsy. Were complications justifiable or preventable?

5. Consultation: Did the case require consultation according to staff relations? Was consultation strongly advisable because of the nature of the case? Is the consultant's report adequate and properly recorded?

6. Operative Cases: Check the adequacy of the operative report in preoperative diagnosis.

8. Medical Library of a Hospital: (p. 142) No measures--but perhaps AHA could borrow some of the library ratio standards used by universities, etc.

9. See survey sheets and forms for complete Standards for Hospital Accreditation; the above examples suggest some of the kinds of applications of unobtrusive measures as indicators of quality hospital care.

Examples

Hospital Planning: National Health Survey (of the U. S. Public Health Service) and indicators of future demand for medical care.

1. Measures of "Sickness" and "Health": (Quoted from Somers and Somers, p. 123)

" 'Sickness' is extremely difficult to measure and 'health' virtually defies definition. In recent years, however, important advances have been made in both the theory and application of biostatistics. For example, the population-based household interview, as a source of information on illness, disability, medical care utilization, and even consumer attitudes, has been increasingly used and refined.

2. National Health Survey: authorized by Congress in 1956 and now a permanent function of the Public Health Service. Also, the Health Information Service (HIF).

Two kinds of data are combined to predict probable future demand for medical care:

a. Demographic, economic, and other objective data such as age, sex, occupation, income, residence, mortality, and morbidity rates.

b. Subjective and cultural data: cultural values, individual attitudes.

3. For fuller discussion, see Herman Miles Somers and Ann Ramsay Somers, Doctors, Patients, and Health Insurance: The Organization and Financing of Medical Care, Anchor Books, 1961 (Originally a study for Brookings Institute).

Directory: Organizations and Persons in Public Health Using Unobtrusive Measures

American Public Health Association
Western Regional Office
655 Sutter Street
San Francisco, California 94102

National Committee on Community Health

United States National Health Survey
United States Public Health Service
Washington, D. C.

Donald L. Hochstrasser, Ph.D.
Department of Community Medicine
University of Kentucky
Lexington, Kentucky 40506

Professor William B. Jackson
Environmental Studies Center
Bowling Green State University
Bowling Green, Ohio 43402

Department of Parisitology and Public Health
Johns Hopkins University
Baltimore, Maryland 21218

Dr. Henrik L. Blum
APHA (Western Regional Office)

Examples

Applications of Unobtrusive Measures to Epidemiology in Public Health Work

1. Epidemiologic methodology: designed to detect an association between the disease and a characteristic of the person who has the disease or a factor in his environment. (This seems, by definition, to suggest the use of unobtrusive measures).

2. Ex.: Multiple factors may be casually related to a single disease. Exposure to cigarette smoking, chromates, asbestos, ionizing radiation, or the refining of nickel can be related to an increased risk of lung cancer.

3. Ex. (converse of above): Effects of a single factor may become manifest in several diseases: Heavy cigarette smoking is associated with cancer of the oropharynx, lung, and urinary bladder.

4. Above examples known as "Risk Factors" in epidemiology.

5. Sources of information: Ratios obtained from actuarial data:

   a. Census data provides denominators for estimates of birth rates, mortality rates, population growth.

   b. Vital statistics: Provides information about a community.

   c. U. S. National Health Survey.

6. Interpretation of the Results of Epidemiological studies: In using ratios as unobtrusive measures of disease, etc., the strength of the relationship is usually expressed in the form of a ratio: Numerator is the observed number of cases in a defined category, and the denominator the expected number derived.

7. Examples of risk factor indicators:

   Obesity indicator of susceptibility to coronary disease.
   Cirgarette smoking indicator of susceptibility to lung cancer.

8. Application and Uses of Epidemiology: "Epidemiologic techniques are used to place the health of the community under surveillance, to plan for its health needs and to evaluate the efficacy of disease control measures. They are also used to identify groups of individuals who have characteristics that are associated with increased risk of disease and, after identification of the characteristics, to plan experiments which will demonstrate their relative importance in the causation of disease." Quote from K. G. Johnson in Kilbourne and Smiley, p. 142.

Note: See Kenneth G. Johnson, "Epidemiology," Chapter 6 in E. Kilbourne and Wilson Smillie (editors), Human Ecology and Public Health, MacMillan Company, 1969.

Examples

Applications of Unobtrusive Measures to Assessment of Community Health Services

Note: The following is a summary and brief outline of Henrik Blum's chapter on "Processes of Assessment," chapter nine appearing in the following:

Henrik L. Blum, M.D., M.P.H., Notes on Comprehensive Health Planning, San Francisco: American Public Health Association (Western Regional Office), 1967.

1. Community Assessment and Social Indicators.

2. Community and Health Status Assessment (See Hochstrasser's Community Health Survey).

3. Health Status and Health Resources.

4. Measurements of Health and Well-Being Status: Use of actuarial records and ratios ( )see esp. part starting on p. 9.08)

5. Measurement of Health Services (See CRDHE section on Hospital Accreditation).

6. "Characteristics of Data".

7. In addition to the foregoing applications and potential application of unobtrusive and nonreactive measures, Blum's conclusions are particularly interesting for the CRDHE study:

(p. 9.21) "There remains one undescribed and as yet infrequently used approach which seeks to take a multitude of diverse descriptors and look for new or unexpected relationships. This is not something the average community can do well now."

(p. 9.21) "Looking for hot spots are approaches we must recommend to those initiating planning assessments. These are very simple ones directed to looking for trobled areas by comparisons with easily available standards in the educational, employment, mortality, availability of services and other areas."

(p. 9.22) "The attempts to create overall warning indices such as the Index of the Indian Health Service tends also to give a comparative picture of the situation for each major grouping of diseases. It uses deaths, disability, and hospitalization to make up a composit indicator of the size of the problem."

Director, Health Program Systems Center
Indian Health Service
P. O. Box 11340
Tucson, Arizona 85706
(602) 294-3451, Ext. 274

They use an interesting inversion of the usual strategy of unobtrusive measures through monitoring first the recorded frequencies of various types of diseases in Indian reservations, then, inferring what must be wrong with the water supply, waste removal, etc.

Disease frequencies are being monitored, looking for patterns (e.g., gastro-intestinal diseases are typically summertime problems, while upper respiratory illnesses come in during the fall.) These patterns have been true for the last 10 years.

They are also using an out-patient simulator, in which each patient is given a card and clocked as they go through various services. Not only does this system diagnose areas in which the waiting period can be reduced, the data can be fed back in aggregates to give information about a village or larger unit. It also provides a complete and instant reading on that person when he returns for more health care. (This is particularly important in many Indian cultures in which aggrandizement of the individual is a definite no-no, and they get very nervous when the doctor takes the long case history typical of most middle class Caucasian medical practice. So they have an instant case history after the first time. Great virtue of the tribal doctor--called "traditional practitioners--is that they don't ask a lot of personal questions of the patient--"he looks, sees, and understands." A nice motto for the user of unobtrusive measures?)

There is general consensus that certain problems can be better handled by "our" medicine, such as broken bones, TB, Typhoid, etc., while problems with a mental health component are usually referred to the Indian practitioner.

They also have cut back on problems of nurse absenteeism by asking each nurse what she or he considered an equitable schedule. By individualizing the criteria used for deriving schedules they have improved the effectiveness of the system as a whole (more freedom in the parts, more order in the whole).

Apparently, many Indians have come to the conclusion that shots are a very effective form of medicine, and the evaluation of a doctor or health care visit is in terms of whether

or not you get a shot. They may be overusing injection as a technique because Indians apparently feel that medicine gotten this way will be more effective than oral ingestion, for example.)

Also, most of the doctors first conceived of patient waiting as the length of time the patient sat in his office. For many of the Indians, "waiting time" means from 6 AM until 9 PM, as they must travel long distances over dirt roads in order to get to the treatment facility. So the worst thing you can do is say to an Indian patient, "Take two of these and stop by to see me tomorrow."

It's interesting to see them developing a system of measures, unobtrusive and not, that can be used in both direction--monitoring disease rates for clues to sanitation problems, and (beginning to) monitor sanitation conditions to predict disease potential in various' villages at various times of the year.

Are all systems of monitoring potentially two-way systems?

Examples

Application of Unobtrusive Measures to Public Health Programs: Estimation of Rodent Populations in Cities.

1. Problem: Estimating Urban Rat Populations: "The exact enumeration of all rats in an area is rarely possible. Alternative methods either measure indirectly by circumstantial evidence or attempt direct enumeration within recognized limitations of completeness and accuracy. Data secured by indirect methods are usually relative measurements useful in comparing conditions in different locations or at different times in the same place." (Emlen, et al. 1949)

2. Indirect Measurement

   A. Survey of rat signs (holes, droppings, tracks, trails, slicks).
   B. Measurement of bait consumed at feeding stations.
   C. Visual counts of live rats.
   D. Records of trapping success (catches per hundred night trap).
   E. Marking and releasing followed by sampling for marked individuals.

Directory: Persons and Organizations in Fields and Professions of Medicine; Psychiatry, Psychology, Behavioral-Environmental Planning

1. Dr. William Ittelson, Dr. Leanne Rivlin, Dr. Harold Proshansky, Dr. Miriam Leibman, City University of New York, Graduate Center, Environmental Psychology. Also, Dr. Phillip Shaver, Columbia University.

2. Dr. Jack French, Dr. Paul Hirsch, and Dr. Laumann, University of Michigan, Institute for Social Research (mentioned in the letter and response from CUNY).

3. Dr. Robert Weiss, Dept. of Psychiatry, Laboratory of Community Psychiatry, Harvard Medical School, 58 Fenwood, Boston, Mass. Spending the year at the following: Tavistock Institute of Human Relations, Committee on Family Psychiatry & Community Mental Health, Tavistock Centre, Belsize Lane, London, N. W. 3, England.

4. Dr. Robert N. Hubbell, Counseling Center Associate, Colorado State University, Ft. Collins, Colorado 80521.

5. Dr. George Stone, School of Medicine, Department of Psychiatry, U. C., San Francisco, CA. 94122; also on staff, Drs. Paul Ekman and John Starkweather.

6. Dr. Leonard Duhl, Public Health & Social Policies, City and Regional Planning, U. C., Berkeley, CA. 94720.

7. Dr. R. Glaser and Dr. Anselm Strauss, (UCSF Medical Center).

8. Dr. Steven R. Forness, Special Education Director of Mental Retardation Center, Dept. of Psychiatry: School of Medicine, UCLA.

9. Dr. Phillip Sirotkin, SUNY at Albany, New York 12203 (formerly at NIMH).

10. Dr. Howard Becker, Department of Sociology, Northwestern U., Evanston, IL. 60201

11. Dr. Robert Sommer, Chairman, Department of Psychology, U. C., Davis, CA. 95616

12. Dr. Rachmiel Levine, Medical Director, City of Hope Hospital, 208 W 8th, Los Angeles, CA. 90014

13. Dr. Alex Simon, Director, Langley Porter Neuropsychiatric Institute, 401 Parnassus Avenue, S.F., CA. 94122

14. Mr. Allen Miller, Commissioner, N.Y. State Health & Mental Hygiene Facilities Improvement Corporation, 44 Holland Avenue, Albany, NY 12209.

15. Mr. Dave Hamburg, Department Chairman of Psychiatry, Stanford University, Stanford, CA. 94305.

16. Mr. Dave Visotsky, Department Chairman of Psychiatry, Northwestern University, Evanston, IL. 60201

17. Mr. Dale Farader, Commissioner, National Institute of Mental Health, Leestown Road, Lexington, Kentucky 40507.

18. Mr. Phil Lee, Medical Affairs, U.C., Berkeley, CA. 94720.

Examples

Professional Evaluation and Decision-making Using Unobtrusive Measures in Fields of Psychiatry, Psychology, Medicine

1. Professional Psychiatry: Evaluation of patients and planning treatment programs: Close observation of the patient's speech, dress, behavior during the interview provides diagnostic information (See note from Dr. George Stone, UCSF).

2. Or, from CUNY reply: "Investigators in our program use interview and questionnaire data to increase their confidence in their conclusions and to generate new hypotheses about the meaning of behavior observed. Probably comparing technique of unobtrusive measurement to other types of measurement is especially important for inferring internal states." (CUNY letter of July 15, 1971).

3. Acoustic Properties of the Voice as Indicator of Patient's Emotional State: (Dr. John Starkweather).

4. Facial Expressions and Body Postures: Unobtrusive Measures of emotional state. Research done by Dr. Paul Ekman (UCSF).

"This program has progressed to a point where it seems probable that practical measures of affect can be derived from still or moving pictures of individuals. This technique is now being applied to the determination of effects of TV violence on children and it is planned to apply it in evaluating emotional responses of criminal offenders to portrayals of violence." (Quoted from Dr. George Stone, UCSF, July 9, 1971 letter).

5. Demographic and census data: Background on patient seeking psychiatric treatment from demographic data used as preliminary check on whether certain sub-populations have greater risks for certain kinds of psychiatric problems. (See Dr. Stone).

6. Evaluation of Medical Staff Inferences about Patient Prognosis: See Study proposals by Dr. Forness (UCLA): uses unobtrusive measures to evaluate doctor's attitudes toward prognoses.

7. Unobtrusive Measures in Identifying Behaviors for Special Education Referrals: Measures of observable behavior--in place of teachers' reports--on children selected for special education. Includes "Behavior Codes."

Examples

Applications of Unobtrusive Measures to Environmental-Behavioral Planning

1. Approach: Environmental Psychologists seek unobtrusive measures of people's reactions to their physical environment.

2. Behavioral Mapping: Trained observers code the main behavior of participants in a geographic area at regular time intervals. See articles by CUNY professors: Ittelson, Rivlin, and Proshansky.

3. Cognitive Mapping: Cues children use to find their way about a building. The cues are identified by mapping the child's progress through the building, etc. See article by CUNY professors Wolfe and Rivlin.

4. Estimates of Spacing Behavior.

5. Attention Studies: Employs measures of eye fixation, smiling, and physiological measures. (Dr. Michael Lewis, Educational Testing Service (Princeton).

6. Unobtrusive Measure in Consumer Behavior: Observation of Choice.

   Organization of the rack music industry inferred from using record sales as an indicator. (Professor Paul Hirsch, University of Michigan).

   Sale of tranquilizers (and alcohol and illicit drugs) as a measure of stress in a population.

   Choice of living room decor as predictor of certain sociological variables. (Professor Laumann, University of Michigan).

7. Indicators of Stress Among Industrial Workers: Combine two kinds of unobtrusive measures: Urine samples (Physiological) and records of absences and sick leaves (Archival).

8. Architecture and Spatial Planning: Observed patterns of usage to indicate the humane-ness of campus environment. See Sim Van Der Ryn's articles; also see, Robert Sommer's Personal Space: The Behavioral Basis of Design.

Directory: Persons and Organizations Using Unobtrusive Measures in Fields of Banking, Personnel Evaluation, and Organizational Management-Monitoring

1. Francis C. Pray, Frantzreb and Pray Associates, Incorporated, 60 East 42nd Street, New York, NY 10017.

2. Professor Albert Shapero, College of Business Administration, University of Texas Multi-Disciplinary Research, Inc., 1209 Rio Grande Street, Austin, Texas.

3. Science Research Associates and the American Institute for Research (The Performance Record: Critical Incident Method) John C. Flanagan and Robert B. Miller.

4. Bank of America

   Mr. William C. Besse, Assistant Vice-President
   Bank of America: Management Development & Education
   Bank of America Center, 12th Floor, San Francisco

   Mr. Clinton Tremain, Vice-President and Manager
   Bank of America: University Branch, Berkeley, CA.

5. Miss Peggy Mitchell, Personnel Officer, 250 Sproul, UC, Berkeley, CA. 94720.

6. Organizational Effectiveness Laboratory, NTL Institute for Applied Behavioral Science, 1201 Sixteenth Street, N. W., Washington, D. C. 20036

Examples

Applications of Unobtrusive Measures to Fields of Banking, Organizational Monitoring and Management, and Personnel Evaluations

1. Banking: Banker seeks a combination of unobtrusive measures as indicators of a loan applicant's stability. See attached sheet of interview with Clinton Tremain (Bank of America) for complete listing of indicators.

2. Banking: Personnel Evaluation: See Bank of America's "Personnel Performance Review Sheet" in which unobtrusive measures are used to evaluate the following:

   A. Quality of work.
   B. Customer relations (courtesy and service).
   C. Work Production
   D. Initiative and Interest
   E. Attitude and Social Acceptance
   F. Organizing and Planning
   G. Judgement and Comprehension

   This review sheet is used by bank managers or training supervisors to unobtrusively evaluate performance of tellers, clerks, and other bank floor personnel.

3. Hourly Employee Evaluation: Science Research Associate's Critical Incident Method Used by foreman to convert specific incidents into general evaluation of employee.

4. Evaluation of a training supervisor: Indicators of poor relations with employees are high rates of absence and turnover; conflict breeds absences and turn-over and is an indicator of low-morale within a company, organization.

5. Personnel Officer: See interview with Miss Peggy Mitchell.

6. Shapero's Organization-Watchers Guide:

   Parking lots: Rush arrival to beat a set starting time indicates low morale wide variety of kinds of cars indicates healthy organization.

   Paper Usage and Availability of Reading Materials

   Productivity accompanied by a healthy disorder; total neatness suggests sterility, inflexibility.

   Coffee counter and near-by bar: correlate consumption of coffee and output of good ideas.

High turn-over rate suggests dissatisfaction.

7. See enclosed letter from Francis Pray for 9 unobtrusive measures of organizations.

8. Observing and Diagnosing Group Behavior: Organizational Effectiveness Laboratory.

Interview with Mr. Clinton Tremain
Vice President and Manager
Bank of America: University Branch
Berkeley, CA.

I. Inferential Measures and Credit Evaluation: Banker seeks indicators of a loan applicant's stability from a combination of indirect measures. For example:

A. Employment duration: The longer, the more stable.
B. Residence: Home-owner or home-buyer seen as probably more stable than an apartment-dweller.
C. Residence: Long-time resident seen as more stable than a more recent arrival or transient.
D. Marital status: Married man or head of household seen as more stable than single.
E. Credit histories and previous records on loan.
F. Age: An older person with a favorable credit history is seen as stable; however, the banker is more likely to approve a loan for a young person with a poor credit history, than an older person with a poor credit history; i.e., banker feels that a mature adult is probably set in his ways (whether good or bad), whereas a younger person could change from youthful irresponsibility into adult stability.

G. Address of applicant's references: Local references of parents, employer, etc. seen as more stable than references of a distant relative or obscure friend in another part of the country. (proximity suggests reliability).
H. Balance of applicant's assets and debts: debt suggests low stability.
I. Nature of the loan: Bank frowns on spur-of-the moment investment schemes, or loans used for "cashing in" on a stock-market tip.
J. Credit Point System (See attached "Time Plan Score Sheet"): Banker adds up applicant's "points"--if total is less than 25, another member of the loan department evaluates the applicant's record. This is used only as a rough index, especially for helping new loan officers.
K. Appearance of the Applicant: Bizarre, outrageous, dirty dress or behavior draws banker's suspicion--but never used as a sure-fire indicator of applicant's financial status. However, discourtesy (or, demanding a loan) is usually strong grounds for refusal of loan--Banker feels no obligation to offer the loan.

II. The Bank and the Surrounding Area: The area in which the bank is located is reflected in the patterns of and amounts of credit, loans granted, etc.

A. Example: Webster Street Bank close to Alameda Naval Station attracts primarily enlisted Naval personnel; another branch attracts primarily Naval officers. The two branches have very different records of granting loans: officers seen as more stable, better risks.

B. See next section for discussion of the Bank in the University Community.

III. The Bank in the U. C. Berkeley Community: Consequences of locale on character and climate of the Bank.

A. Unobtrusive measure: one index of how a bank is treating its customers is the number of accounts transferred; i.e., dissatisfied customers will transfer.

B. Staff and tellers, etc. at the University Branch are for the most part highly educated--many are students or graduate students; result is a higher caliber and higher morale than other bank branches.

C. Unobtrusive measure: the university branch bank's volume of business follows the academic calendar; i.e., big influx of accounts, loan requests, etc. during August--October (back-to-school period).

D. Unique problem: university location provides unusually large VOLUME of transactions; heterogeneous student population.

E. Internal Monitoring: Manager delegates authority to operations officers. Efficiency can be inferred from average time of transactions.

F. Despite student unrest and protest since 1964, Bank of America has experienced amazing growth during last seven years.

IV. Bank of America Continuing Education: Bankers return for training in new methods, refresher courses, and especially to learn of changes in banking law. Continuing school is located in San Francisco.

"PERFORMANCE REVIEW"

Category	Indicators	Performance (What happened?)
Quality	Shorts, overs etc. (front page). Neatness, accuracy or written reports. Central office reports.	
Customer Relations		
a. Courtesy	Number of complaints; number of compliments. Special courtesies (long lines). Calmed Angry customer - saved a customer	
b. Services	Number of services sold-total dollars. (i.e., Xmas Club, Travelers Cheque) Exceptional services sold.	Her sales vs. expected or average for branch.
Work Production	Tap allowances vs. her performance. Time and ability in specific responsibilities. Work schedule, time of long line.	
Initiative and Interest	New ideas for branch improvement. Specific help and suggestions to fellow employees. Met emergencies on her own. Failed to report a mistake or faulty procedure. Response to promotion or development opportunity.	
Attitude and Social Acceptance	Times corrected for appearance. Times assisted fellow employees. Specific incidents with supervisor. (balky, dependent, requires too much time etc.)	

Category	Indicators	Performance (What happened?)
	Effect group's morale or performance? Work habits i.e., late, coffee breaks, activity during quiet periods.	
Organizing and Planning	Put in priorities--work on important tasks--hop from tasks to tasks--leaves work incomplete, busier than she needs to be.	
Judgment and Comprehension	Speed at learning a new procedure. Comprehension of instructions. Effectiveness on her own i.e., with customers, new procedures etc.	

eb and Pray Associates, Inc.
2nd Street, New York 10017, 212 986-3338
Francis C. Pray/Chairman
Arthur C. Frantzreb/President

June 24, 1971

Dr. Harold L. Hodgkinson
Project Director
Center for Research and Development
in Higher Education
University of California
Berkeley, California 94720

Dear Bud:

I am intrigued by your study of "unobtrusive measures."

Here are some of the ones which I use, even though I have not established any norm of validity.

1. Administrators who spend a lot of time in student coffee shops under the guise of "keeping in touch with students." As I join them and find them talking with other administrators also drinking coffee, I get the feeling that these people feel under no particular performance drive and, in fact, may not really know what to do with their time.

2. I am terribly suspicious of this one, but I have long had the impression that inveterate pipe smokers may be good philosophers but are rarely action-oriented. (The exception might be the younger man who is trying out a pipe for its "image" but is not seriously involved in the tamping-puffing-cleaning syndrome.)

3. I don't feel secure in this one either, but when I go into a man's office and find it completely dominated by the gadgets of recognition of Rotary, Kiwanis, souvenir items, I get a negative feeling about his sense of priorities. I am not talking about items in good taste or high quality.

4. I guess we all draw some conclusions from the kinds of books we see in a man's office, particularly if they look used.

5. I get a very negative reaction from clutter, but a similar question when there is no obvious sign of work in the room and everything is flat, polished, empty surface.

6. We do a lot of interviewing in our studies, and things which are unsaid (therefore, I suppose, unobtrusive) say quite as much as the overt responses.

7. One always gets an impression from the degree to which buildings are clean and maintenance workers seem to be on the job. Institutional morale certainly is demonstrated quite clearly at the lower end of the employment hierarchy.

8. Trustee meetings are a clear giveaway as to management effectiveness. The kind and amount of discussion. The numbers of trustees who leak away before the meeting is over, the expressions on peoples' faces, the appearance of supporting material, all speak volumes about management's ability to build and service an adequate board; and if the board comes out with a rating of "C" or worse, the institution is in trouble.

9. I haven't spoken of students because behavior varies so widely according to the type of institution (community college, resident liberal arts college, etc.). But if I see a lot of card playing in the morning, petty gambling games between classes, sloppy (no objection to highly informal) behavior in dormitories and libraries, I certainly have a question as to the leadership and character of the faculty and of the administration.

Some of the other examples you cite in your letter of June 11 are pertinent and not further mentioned above.

I am sure there are lots of other "signs", and your general letter of June 11 has started me off on the extension of my own list.

Cordially,

29

Francis C. Pray

FCP:hwd

Directory: Persons and Organizations using Unobtrusive Measures in fields of Social, Economic Accounting and Planning.

1. Professor Abba Lerner, Department of Economics, U.C. Berkeley.
2. Professor Carlo Cipolla, Department of Economics, U.C. Berkeley.
3. Professor Richard Roehl, Department of Economics, U.C. Berkeley.
4. Survey of current Business
5. Federal Government

   U. S. Department of Commerce publication: U. S. Industrial Outlook

   U. S. National Commission on Technology, Automation, and Economic Progress
6. Professor Raymond Bauer, Harvard Business School, Cambridge, Mass.
7. Professors Scott Ward and Thomas S. Robertson, Harvard Business School study of Fashion Industry.
8. Dr. Robert Hubbell, University Counseling Center, Colorado State University, Ft. Collins, Colorado 80521.
9. Mr. John Fairchild, publisher of Women's Wear Daily.
10. Professor Karl Deutsch, Department of Political Science, Yale University, New Haven, Conn. 06520.
11. Professor Lewis Dexter, Department of Politics, University of Massachusetts, Amherst, Mass. 01002

Examples

Applications of Unobtrusive Measures for Decision-Making in fields of Social, Economic Accounting and Planning

1. Indicators of Inflation: Professor Abba Lerner (UC, Berkeley)

To distinguish between Demand Inflation and Cost Inflation, "What is needed is a clue or a sign. . .in which would indicate whether it is the buyer or the seller who is the operative factor in raising the prices. . .Clues to this can be seen in such things as:

Degree of politeness of shopkeepers to customers.
Degree to which shopkeepers make their shops attractive, spend money on advertising, put attractive displays in window.

Above examples suggest an attempt to coax unwilling buyers, indicating a Cost Inflation, enforced by the seller rather than by the buyer.

"The unreadiness of economists to accept such unorthodox clues rather than the traditional statistical measures has been a serious handicap in the development of the theory of inflation." (Lerner, letter of June 25, 1971).

2. Governmental Planning: Proxy Variables: indirect measures for taking the pulse of the nation's economy, and determing the business outlook.

U.S. Department of Commerce, Survey of Current Business, U.S. Industrial Outlook

Steel industry seen as good indicator ("lead" as opposed to "lag") of general business health.

Paper consumption (cardboard, wrapping paper) is widely used as a pulse of the national economy--as it is sensitive to over all production, because all shipping and transporting of manufactured goods uses this product.

3. Long-Range Systems of Social Accounting: See Raymond Bauer's Social Indicators.

And the U.S. Commission on Technology, Automation, and Economic Progress, 1966 report, Technology and the American Economy.

4. Restaurants as sensitive indicator of the national economy.

5. Flow of mail, patterns of and amount of mail, etc. as indicators of political cohesion and spheres of influence, (Karl Deutsch).

6. Robert Hubbell: indicators for "Effects of Mobility."

7. Fashion Industry: indicators for "what will sell" based on observations of women's behavior; whole realm of indicators of personal consumption and determinants of choice. (see Harvard Business School Case Study.)

Directory: Persons and Organizations in the field of Law which use unobtrusive measures.

1. Mr. Paul Peyrat, et. al., Center for Continuing Education of the Bar, University Extension, U.C., Berkeley, CA. 94720.

2. Office of the Public Defender, Alameda County, Fallon Street, Oakland, CA.

3. American Bar Association: Accreditation

4. California Bar Association: Accreditation

Applications in the Field of Law:

Interview with Mr. Paul Peyrat, et al.
Center for Continuing Education of the Bar
University of California
Berkeley, California 94720

A. "FeedForward" of Legal Practice: lawyers must anticipate and readjust their practice to the new needs, new constraints, new freedoms caused by changes in the law. Thus, lawyers "sift the legal winds" by using the following areas as indicators:

   1. Crucial court decisions.
   2. Legislature proceedings.

B. Anticipation of new needs, changing practices is the special concern of the Center for Continuing Education of the Bar: set up by the State of California in conjunction with the University of California. Publications, conferences, lectures, workshops are designed to meet the needs of lawyers for continuing education, refresher courses, etc.

   Important task of the Center's staff is to anticipate, predict needs, programs, etc.

C. Kinds of law cases often follow social-economic trends:

   1. During economic recession, increased need for training and information on bankruptcy cases.
   2. Impact of (ex.) sociological research on communities, poverty, etc., may cause establishment of new kinds of legal programs, services. For example, California Rural Legal Assistance, OEO programs.

D. Monitoring and Evaluation of Programs.

   1. Problem: How to evaluate services? Ratios, such as a batting average of court decisions, can be misleading. Perhaps long-range social change is a better indicator?

   2. Problem: How do you measure the attainment of a goal such as "gaining the confidence of local community

members for the law profession, for the court system? Example: OEO legal aid tended to attract black women as clients, used in cases against black men. Thus OEO raises the hostility of black men in support cases, etc., (divorce cases)

E. Selection of Jurors: Each lawyer has his own theories concerning indirect indicators of a potentially good/bad jury member. For example, national-ethnic character might be associated with propensity to be generous in financial settlements. Lawyer looks for indicators of a stable, solid citizen (similar to Banker evaluating loan applicants).

F. Plaintiff: Lawyer attempts to bring out his client's "good" qualities to the jury, or similarly, may attempt to discredit a witness by showing his bad associational indices.

G. In taking a case and planning his strategy, a lawyer looks for "checkables" by which to establish the reliability of his client's testimony. For example, might check client's statement with some record (police report).

H. Jury selection: lawyer often has a psychiatrist observe <u>other</u> prospective jury members while the lawyer is interviewing one of them. Aim: Look for behavior (folded arms, etc.) which indicate attitudes, biases of the prospective jurors awaiting screening.

I. Accreditation of law schools: American Bar Association, California Bar Association.

Application of Unobtrusive Measures to Aviation Monitoring

The following passage is taken from Notice to Jet Pilots (July 31, 1970) by Mr. Robert J. Bresnahan, Director of Aviation, Orange County (California) airport:

1. "The Orange County Airport is one of the few airports equiped with a 24 hour, 5 station noise monitoring system . . .By analyzing the tapes we can determine speed, direction, altitude, etc., and we can determine if you expedite your climb or not, and if you make the turn or not, and if you throttle back or not."

(Monitoring of Individual Flights)

2. Tapes used in airport--community relations: Noise abatement policy.

3. Long-range community planning--noise pollution.

Directory: Persons and Organizations using Unobtrusive Measures for purposes of Accreditation and Evaluation in the field of Higher Education.

1. Donald V. Adams, Vice President: Student Life, Drake University, Des Moines, Iowa 50311.

2. Alexander W. Astin, Director, Office of Research, American Council on Education, Washington, D.C. 20036.

3. Kay J. Anderson, Western Association of Schools and Colleges: Accrediting Commission for Senior Colleges and Universities, c/o Mills College, Oakland, California 94613.

4. Allan Barton, Bureau of Applied Social Research, Columbia University, New York, New York 10027.

5. Cynthia F. Behrman, Wittenberg University, Springfield, Ohio 45501.

6. Louis T. Benezet, Office of the President, SUNY Albany, New York 12203.

7. James L. Bess, Director of Planning Studies, SUNY Stony Brook, New York 11790.

8. Robert Birnbaum, Director: Office for Research in Higher Education, City University of New York, New York 12203.

9. Arthur Chickering, Vice President for Academic Affairs, SUNY Empire State College, New York 12203.

10. Sorrell E. Chesin, Assistant Vice President of Student Affairs, SUNY Albany, New York 12203.

11. Ruth E. Eckert, College of Education, University of Minnesota, Minneapolis, Minnesota 55455.

12. Gerald Grant, Experimental College Study, Harvard University, Cambridge, Massachusetts 02138.

13. Andrew M. Greeley, Program Director: National Opinion Research Center, University of Chicago, Illinois 60637.

14. Rollo Handy, Office of the Provost: Faculty of Educational Studies, SUNY Buffalo, New York 14214.

15. Stanley O. Ikenberry, Associate Director: Center for the Study of Higher Education, Pennsylvania State University University Park, Pennsylvania 16802.

16. John Mahoney, Dean: College of Arts and Sciences, University of Detroit, Michigan 48221.

17. Mike Metty, Antioch-Columbia, Columbia, Maryland 21043

18. David Riesman, Department of Sociology, Harvard University, Cambridge, Massachusetts 02138.

19. Ruel Tyson, Department of Religion, University of North Carolina, Chapel Hill, North Carolina 27514.

20. Southern Accrediting Association.

21. Fred F. Harcleroad, President, American College Testing Program, P. O. Box 168, Iowa City, Iowa 52240.

22. Robert A. Feldmesser, Research Sociologist, Educational Testing Service, Princeton, New Jersey.

Examples

Applications in Higher Education (Accreditation, Planning)

1. Bulletin Boards as indicator of tenor of student culture on the campus.
2. Ratio of male/female students as indicator of campus social life.
3. Selection of books in bookstore: underground publications, non-textbooks, etc.
4. Decor of public spaces on campus.
5. Amenities as indicators of tone in an institution: related to how the individual employee, participant perceives or defines his role in the institution (*Note: Compare section on business management, organizational monitoring, and personnel evaluation).

   office size
   square footage per occupant
   windows and lighting
   noise level
   index of comfort (windows that open, temperature control)
   proximity to restrooms
   coffee provisions
   wood versus metal furniture
   blackboards supplied
   freedom to decorate
   drapes versus blinds

6. Clothing styles and length of hair as indicator of campus climate.
7. Organizational Cleanliness: parabolic relationship between cleanliness and an institution's creativity and quality of production; i.e., at some point, over-cleanliness suggests sterility; i.e., certain level of "creative disorderliness".
8. Graffiti as indicator of campus climate.
9. Parking Lots: kinds of cars, who gets reserved spaces, provisions for visitors.
10. Library: open stacks versus closed stacks as indicator of administration's attitude towards undergraduates.
11. Location and kinds of buildings which house research centers.
12. President's home: location, size, type as indicator of his status.
13. Number of memorial inscriptions, bronze tablets, etc. as indicator of alumni attitude, affection.
14. Vandalism, defacements as indicators of student attitudes toward school.

15. Institutional Security: measured by restrictions on visitors.
16. Ratio of significant interchanges about course topics, materials to chit-chat and pleasantries as measure of a course's academic success.
17. Ratio of graduate degrees conferred to the full-time graduate student enrollment in a given field--indicator of the health of a department and the quality of interpersonal relations between students, faculty, etc.
18. Styles of architecture by departments--Also, renovation of old buildings versus construction of new kinds.

Uses of Unobtrusive Measures in Higher Education

1. Faculty handbooks: coercive elements, warnings, etc. indicate institutional malaise.
2. Are professors listed alphabetically or by rank?
3. Kinds of stores surrounding campus suggest student tastes, consumer patterns.
4. Volumes of paper consumption.
5. Academic calendar: provisions for special holidays (example: does campus close down academic work for a "winter carnival" or homecoming?)
6. Animals, pets on campus.
7. Custodians, etc., have pride in their work as indicator of institutional health (receptionists, cooks, equipment managers, etc.).
8. Amount of time spent on each item on agenda at faculty meeting: Especially as lunch or dinner hour approaches.
9. "Geography" of a classroom: seating arrangements.
10. Ratio of a book's "readibility" (type-face, margins, paper, binding, weight) and the number of students in a class who will read it if assigned. One can estimate the reaction of the class to the book.
11. Attributes Contributing to Career Success (Rank listing) American Political Science Association, 1964:

Volume of publication
School at which doctorate was taken
Having the right connections
Ability to get research support
Quality of publication
Textbook authorship
Luck or chance
School of first full-time appointment
Self-promotion ("brass")
Teaching Ability

12. Curriculum jargon: To trace certain vogue words in educational innovation planning, etc., ("seminars," "modes of thought," etc.) indicates the diffusion and popularity.
13. Does an administrator (president, dean) use proxies or assistants?
14. College catalogues and P.R. Brochures: Slick, glossy, big catalogue suggests a big, impersonal institution.
15. College catalogues: Are there photographs of campus buildings or artist's conceptions of proposed buildings?
16. A new, experimental college will not have a slick, glossy catalogue--will tend to be stapled together, few course listings, more rhetoric concerning philosophy and aims.
17. College catalogues: Check for rhetoric of relevance and fads in new programs.
18. College catalogues: Check for old photographs of students sitting outside used year after year (old clothing styles, etc.)
19. College catalogue: Is it crammed full of rules, regulations, degree requirements, and other information beyond the interest of a prospective applicant? I.e., is it an official catalogue or a brochure such as "This is State U."
20. Number (percentage) of undergraduates who go on to graduate study as an indicator of intellectual/academic climate. Distinguish by fields--example, academic graduate study, business administration, law, medicine, etc.
21. Degree requirements: Rigid, specific or general, flexible?
22. Accessibility of independent study programs, etc.
23. Campus climate: Number of students who stay on campus during a week-end, or during semester vacations.
24. Campus-community (town-gown) relations.
25. Location of faculty residence in relation to campus: i.e., around campus, or commuter faculty?
26. Kinds of locations of student housing.
27. Ratio of the number of decisions made to the number of hours of discussion among administrative groups as indicator of two areas:
    A. Acceptance those decisions received in the university.
    B. Extent to which administrators are aware of their own values and hold them with some consistency, and the extent to which they know and understand the situations they are trying to resolve.
28. Indicator of institutional problems is the increased number of appointments with the dean.
29. Indicator of a healthy institution: Ways around dumb rules without involving formal procedures; when the situation deteriorates, everything must be done formally.

30. Athletic and Recreational Facilities: Is there a schism between intercollegiate team facilities and those for use by intramurals, recreation? Or, are facilities readily accessible to all members of the campus community?
31. Evaluating a course: Check its reading lists, kinds of requirements (papers, multiple choice exams, office hours, etc.)

(From Mike Metty, Ruth Churchill, Harold Hodgkinson)

Ancient Chinese Proverb: The Palest Ink is Clearer than the Best Memory

**

1. Ratio of number of faculty meetings to number of actions passed per meeting.
2. Ratio of number of board meetings to number of actions passed per meeting.
3. Ratio of number of student government meetings to number of actions passed per meeting.
4. Ratio of number of major campus committee meetings to number of actions passed per meeting.
5. Mean and median years at institution for F and A.
6. Number of F whose highest degree is from institution where now teaching.
7. Number of F whose undergraduate degree is from institution where noe teaching.
8. Number of F whose wives are graduates of institution where now teaching.
9. Number of F whose highest degree is from prestige institution.
10. Number of A who are graduates of the institution.
11. Number of A who possess a degree in administration of higher education.
12. If denominational school, number of F,A,S,T, who are members of that denomination.
13. Number of S from extreme lo and hi income and occupational levels, (blue, white collar).
14. Number of S from core city homes, suburban homes, small town homes.
15. Number of S accepted compared to number who enroll.
16. Number of S applications compared to number accepted.
17. Number of entering S who graduate on time in requisite number of years.
18. Number of entering S who graduate early or late.
19. Number of catalogues printed per number of enrolled students.
20. Number of admissions staff per number of enrolled students.
21. Number of F at various ranks compared to number of tenured F at same rank.
22. Number of years of F service before the award of tenure, by department.
23. Number of F and A with provisional titles--acting, visiting, etc.
24. Number of F who voluntarily resign to number who are not reappointed.
25. Number of S who withdraw to number who are academically dismissed.
26. Number of S who are dismissed for academic or social reasons to size of S body.
27. Per centage of grads. who enter occupations, graduate schools, etc.
28. Department chairmen elected or appointed; length of service by dept.
29. Number of FAST positions with behavioral specifications in a handbook.
30. Number of FAST positions in campus committees.
31. If denominational, average church attendence of FAST.
32. Number of joint appointments across departments.
33. Number of joint appointments across F-A line (administrators who teach).
34. Number of courses called "interdisciplinary" in catalogue.

** F = Faculty; A = Administrator; S = Student; T - Trustee

35. Number of courses with a common syllabus for all sections.
36. Number of courses with a common syllabus which changes over two year cycle.
37. Number of buildings named for donors to-number named for national figures.
38. Per cent of library collection devoted to textbooks.
39. Per cent of periodicals with broken runs.
40. Per cent of books ordered by librarian..
41. Number of departments who do not spend book purchase funds.
42. Linear feet of material on history of campus in library and inches in catalogue.
43. Number of portraits of past presidents of institution and where hung.
44. Number of works of art by S and F, where displayed, art majors or not.
45. Number of works of art by outside professionals.
46. Number of campus administrators called by first names by F, T, and S.
47. Number of campus faculty called by first names by S.
48. Number of campus F and A with freaky nicknames ("The Old Man," "Slippery Sam," etc.).
49. Number of divorced F and A. (Also S?)
50. Number of married S (also mixed marriages?)
51. Per cent of operating budget from state, federal, and foundation funds.
52. Dollars of operating budget per course registration, by department.
53. AAUP salary ratings.
54. Number of days per month of consultant time purchased by institution.
55. Per cent of newspaper space for ads, national and local editorials, letters from readers, sports, regular columns, cartoons, wire service ads.
56. Per cent of alumni magazine devoted to class notes; per cent of class notes of necrology to activity.
57. Per cent of cubic footage of bookstore devoted to books, records, paintings.
58. Per cent of cubic footage of bookstore devoted to items with college seal (ash trays, etc.)
59. Per cent of cubic footage of bookstore devoted to recreational items (cards, frisbees, etc.)
60. Per cent of S who are "working their way through."
61. Per cent of S who have been to Europe.
62. Number of cases per year of reported theft.
63. Number of S organizations to total S body.
64. Number of broken windows in dorms per year.
65. Per cent of students who commute.
66. Per cent of resident S who leave campus on weekends (check for type, condition, and age of cars in student parking lot).
67. Per cent of total, operating budget devoted to paraprofessional sports (Big Team).
68. Number of attempted S suicides.
69. Per cent of total operating budget spent on non-functional "beautification" buildings and ground projects.

PART III

MODEL: LEVELS OF USAGE

Model: Applications of Unobtrusive Measures

The preceding compilation of examples indicates the variety of applications of unobtrusive measures to problems and situations related to specific fields of professional social service, such as law, medicine, psychiatry, higher education, architecture, and public health. Categorization of uses by individual fields may be said to represent a vertical listing.

In this section, we shall go beyond detailed listings within fields, to an horizontal typology of similar kinds or levels of applications between the respective social service fields.

The approach to the construction of this general typology will be to categorize uses of unobtrusive measures in terms of the client or clientele or situation in which the professional applies an unobtrusive measure in the process of rendering his service. The categories may be distinguished as follows:

Level One: One-on-one individual cases; inter-personal; face-to-face takes place within a room, ex.

Level Two: Professional services for a specific community, population organization, or institution. (Takes place within a building, a circumscribed community or physical environment.)

Level Three: Trans-institutional, regional, general rendering of professional services. In-service, continuing professional education training.

Characterized by individual cases (one-to-one) contact between the professional and an individual. Takes place, for example, in a single room.

Examples: By Fields

Hospitals

Nurse uses indirect clues to estimate a patient's condition. Accreditor evaluating an individual hospital administrator. Doctor-patient examination.

Public Health

"Hot Spot" method: An extreme individual case, (ex. "blue man") seen as indicator of a potential community disease.

Epidemiological diagnosis of individual: Individual's smoking habit leads to diagnosis for lung cancer, etc., obesity linked to cardiac problems, etc.

Mental Health

Psychiatrist and individual patient: Observes body movements, facial expressions, etc., voice, indicators of emotional state.

Individual counseling

Environmental Design

Cognitive mapping: Trained individual observes one person's behavior in a building--sense of direction, sense of personal space.

Behavioral Mapping: Trained observer watches individual's use of a geographical region (park, etc.)

Banking

Banker uses unobtrusive measures to evaluate a loan applicant.

Personal Evaluation

Foreman uses "Critical Incident" method to evaluate individual employee. Evaluation of individual clerks, tellers via unobtrusive measures. (See Bank of America's excellent indicators sheet). Personnel officer and job applicant: Clues, signs during interview.

Law

Lawyer screens potential jury members.
Lawyer-client relation.
Jurometrics: Strategies of "psyching out" the judge by the lawyer.

Aviation Noise Monitoring

Use of noise tapes for indirect monitoring of an individual pilot's take-off, turns, etc.

Higher Education

Admissions officer evaluating an applicant for admission. Hiring: Indirect measures of a faculty member's potential. Tenure: Criteria for measurement of a professor's quality of work.

Characterized by professional services and evaluation of a specific community, organization, institution, or population. Tends to deal with a circumscribed environment, such as a company plant, an Indian reservation, a town, a campus.

Examples: By Fields

Hospital Administration

Accreditation of an institution: Ratios as indirect measures of service quality:

autopsies
square footage per bed
length of stay per patient
ratio of staff to patients

Public Health

Indicators of a community's distinctive habits, cultural patterns. Example: Indian Reservation: Attitudes towards doctors, etc., (See interview with Charles Erickson).

Disease frequencies of a certain population, social group. Example: See University of Kentucky Community Health Survey.

Estimates of rat populations in a city.

Environmental Design

Indicators of transportation, traffic patterns.
Patterns of usage for facilities in (ex.) a campus.
Relate usage patterns to geographical, terrain, and spatial-architectural plans.

Mental Health

Evaluation of a medical staff's inferences about patient prognosis. Community Character: Occurence of certain kinds of mental illnesses by ethnic, economic characteristics; behavior in a community--consumption of drugs, alcohol as indicators of community mental health needs.

Accreditation of group, institutional treatment; CUNY study of patient care and size of psychiatric wards, etc.

Higher Education

Accreditation of an Institution: Ratios as indirect measures of quality.

Resources: library ratios
Student / faculty ratio
Percentage of Ph.D.'s on faculty

Feedback on Graduates.

Percentage of students continuing to graduate school.
Percentage in "Who's Who," and other awards.

Indicators of a campus climate, student culture.

Bulletin boards
Housing
Access to facilities (example: Open stacks in libraries?)

Organizational Morale

Parking lots
Paper usage
Clutter and Cleanliness: Parabolic relation (See MaGregor's production-personality curve)
Employee turn-over rate
Employee absence and sick-leave rate
Urine analyses as measures of industrial workers' stress

Law

Accreditation of Law Schools: Ratios as indicators of training quality.
Percentage of graduates passing bar exam.
Library ratios.

Evaluation of innovative programs of legal service.
CRLA program, OEO program: Must look for signs of changing community attitudes towards lawyers, courts.

Aviation Noise Monitoring

Noise monitoring of flights and airport's relation with local community: Response to local complaints, violations of public welfare, sound pollution.

MODEL: III

Characterized by trans-institutional monitoring, planning beyond individual cases, beyond the immediate locale, and beyond the immediate present. For example, instead of single hospitals, may refer to the medical profession; instead of single colleges, regional planning boards.

Examples: By Fields

Medicine

Readjustment of kinds of services--signs and clues to indicate shift from treatment of acute, communicable diseases to treatment of chronic diseases.

Implementation of programs such as Medi-Care, insurance, use of para-medical staff.

Public Health

National Public Health Survey: Inter-relate census data, social indicators, rates and locales of diseases, and cultural-demographic data.

Environmental-Architectural

Regional planning: Indicators of demographic shifts. Indicators of over-crowding and violations of personal space.

Economic, Banking, Social Accounting

Proxy indicators of long-range economic trends
Inflation indicators
Indicators of the Effects of Mobility
Community relations, political cohesion: Indicated by mail flow, etc.

Law

Continually check 1) Proceedings in legislatures
2) Crucial court decisions to anticipate changing needs for lawyers in their practice. (Especially training workshops offered by Centers for Continuing Education of the Bar).

Aviation Noise Monitoring

Go beyond monitoring of individual pilots, and responding to local complaints of noise, etc., into larger realm of common welfare and social pollution.

Higher Education

Regional Planning
Structural changes: Example: From colleges to universities.
Example: From monolithic institutions to regional systems
Trans-institutional indicators: ETS, SAT